In the Claims:

Please enter the following amended claim set:

1. **(Previously presented)** A method for orienting a corrective prescription for eye surgery comprising the steps of:

filtering a first image map of an eye of a patient at a first time during the surgery to reduce noise;

processing the filtered first image map to produce a first edge image of the eye in two dimensions;

filtering a second image map of the patient eye at a second time during the surgery to reduce noise;

processing the filtered second image map to produce a second edge image of the eye in two dimensions;

selecting two identifiable features from one of the first and the second image maps;

correlating a location of the two features in the first and the second edge images; and

calculating from the correlated locations an orientational change to be applied to a previously determined corrective prescription for a correction profile to be achieved on the eye during the surgery.

2. **(Original)** The method recited in Claim 1, wherein the first and the second image maps comprise a first and a second video image captured with one of a charge-

coupled-device camera, a scanning laser ophthalmoscope, and a retinal nerve fiber layer analyzer.

3. **(Original)** The method recited in Claim 1, wherein the selected eye features comprise portions of at least one blood vessel in a sclera of the eye.

4. **(Canceled)**

5. **(Previously presented)** The method recited in Claim 1, wherein the filtering steps comprise applying a Gauss filter to the first and the second image map and forming, from the first and the second filtered image maps, a first and a second filtered intensity profile.

6. **(Original)** The method recited in Claim 5, wherein the first and the second image map processing steps further comprise applying a threshold to the first and the second filtered intensity profiles to produce a first and a second thresholded image.

7. **(Original)** The method recited in Claim 6, wherein the first and the second image map processing steps further comprise applying a thin function to the first and the second thresholded image to form the first and the second edge images.

8. **(Previously presented)** The method recited in Claim 1, wherein the first and the second filtered intensity profile forming steps comprise:

applying the Gauss filter to the first and the second intensity profiles at a first angle to form a first and a third modified intensity profile;

applying the Gauss filter to the first and the second intensity profiles at a second angle substantially perpendicular to the first angle to form a second and a fourth modified intensity profile;

averaging the first and the second modified intensity profiles to form the first filtered intensity profile; and

averaging the third and the fourth modified intensity profiles to form the second filtered intensity profile.

9. **(Original)** The method recited in Claim 1, wherein the surgical procedure comprises achieving a desired corneal profile using an excimer laser, and the orientational change calculating step comprises reorienting a coordinate system of the laser to compensate for eye movement between the first and the second time.

10. **(Original)** The method recited in Claim 1, wherein the processing, selecting, correlating, and calculating steps are performed at predetermined intervals throughout the surgery, in order to detect orientational changes on a substantially continual basis and permit substantially "real-time" application of the orientational change to the correction profile.

11. (Currently amended) A computer-readable medium encoded with a software package for orienting a corrective prescription for eye surgery, the software package comprising:

a code segment for filtering a first image map of an eye of a patient at a first time during the surgery to reduce noise;

a code segment for processing the filtered first image map to produce a first edge image of the eye in two dimensions;

a code segment for filtering a second image map of the patient eye at a second time during the surgery to reduce noise;

a code segment for processing the filtered second image map to produce a second edge image of the eye in two dimensions;

a code segment for correlating a location of two selected identifiable features from one of the first and the second image maps between the first and the second edge images; and

a code segment for calculating from the correlated locations an orientational change to be applied to a previously determined corrective prescription for a correction profile to be achieved on the eye during the surgery.

12. (Canceled)

13. (Currently amended) The computer-readable medium ~~software package~~ recited in Claim 11, wherein the filtering code segment comprises a code segment for

applying a Gauss filter to the first and the second image map and for forming, from the first and the second filtered image maps, a first and a second filtered intensity profile.

14. (Currently amended) The computer-readable medium ~~software package~~ recited in Claim 13, wherein the first and the second image map processing code segments further comprise code segments for applying a threshold to the first and the second filtered intensity profiles to produce a first and a second thresholded image.

15. (Currently amended) The computer-readable medium ~~software package~~ recited in Claim 14, wherein the first and the second image map processing code segments further comprise code segments for applying a thin function to the first and the second thresholded image to form the first and the second edge images.

16. (Currently amended) The computer-readable medium ~~software package~~ recited in Claim 13, wherein the first and the second filtered intensity profile forming code segment comprises:

a code segment for applying the Gauss filter to the first and the second intensity profiles at a first angle to form a first and a third modified intensity profile;

a code segment applying the Gauss filter to the first and the second intensity profiles at a second angle substantially perpendicular to the first angle to form a second and a fourth modified intensity profile;

a code segment averaging the first and the second modified intensity profiles to form the first filtered intensity profile; and

a code segment averaging the third and the fourth modified intensity profiles to form the second filtered intensity profile.

17. (Currently amended) The computer-readable medium ~~software package~~ recited in Claim 11, wherein the surgical procedure comprises achieving a desired corneal profile using an excimer laser, and the orientational change calculating code segment comprises a code segment for reorienting a coordinate system of the laser to compensate for eye movement between the first and the second time.

18. (Currently amended) The computer-readable medium ~~software package~~ recited in Claim 11, wherein the processing, correlating, and calculating code segments are performed at predetermined intervals throughout the surgery, in order to detect orientational changes on a substantially continual basis and permit substantially "real-time" application of the orientational change to the correction profile.

19. (Previously presented) A system for orienting a corrective prescription for eye surgery comprising:

means for filtering a first image map of an eye of a patient at a first time during the surgery to reduce noise;

means for processing the filtered first image map to produce a first edge image of the eye in two dimensions;

means for filtering a second image map of the patient eye at a second time during the surgery to reduce noise;

means for processing the filtered second image map to produce a second edge image of the eye in two dimensions;

means for selecting two identifiable features from one of the first and the second image maps;

means for correlating a location of the two features in the first and the second edge images; and

means for calculating from the correlated locations an orientational change to be applied to a previously determined corrective prescription for a correction profile to be achieved on the eye during the surgery.

20. (Original) The system recited in Claim 19, further comprising means for controlling the processing, selecting, correlating, and calculating means to be performed at predetermined intervals throughout the surgery, in order to detect orientational changes on a substantially continual basis and permit substantially "real-time" application of the orientational change to the correction profile.

21. (Previously presented) A method for orienting a corrective prescription for eye surgery comprising the steps of:

filtering a first image map of an eye of a patient at a first time during the surgery to reduce noise;

processing the filtered first image map to produce a first edge image of the eye in two dimensions;

filtering a second image map of the patient eye at a second time during the surgery to reduce noise;

processing the filtered second image map to produce a second edge image of the eye in two dimensions;

selecting two identifiable features from one of the first and the second image maps;

correlating a location of the two features in the first and the second edge images; and

calculating from the correlated locations an orientational change to be applied to a previously determined corrective prescription for a correction profile to be achieved on the eye during the surgery;

wherein the processing, selecting, correlating, and calculating steps are performed at predetermined intervals throughout the surgery, in order to detect orientational changes on a substantially continual basis and permit substantially "real-time" application of the orientational change to the correction profile.

22. (Currently amended) A computer-readable medium encoded with a software package for orienting a corrective prescription for eye surgery, the software package comprising:

a code segment for filtering a first image map of an eye of a patient at a first time during the surgery to reduce noise;

a code segment for processing the filtered first image map to produce a first edge image of the eye in two dimensions;

a code segment for filtering a second image map of the patient eye at a second time during the surgery to reduce noise;

a code segment for processing the filtered second image map to produce a second edge image of the eye in two dimensions;

a code segment for correlating a location of two selected identifiable features from one of the first and the second image maps between the first and the second edge images; and

a code segment for calculating from the correlated locations an orientational change to be applied to a previously determined corrective prescription for a correction profile to be achieved on the eye during the surgery;

wherein the processing, correlating, and calculating code segments are performed at predetermined intervals throughout the surgery, in order to detect orientational changes on a substantially continual basis and permit substantially "real-time" application of the orientational change to the correction profile.

23. (Previously presented) A system for orienting a corrective prescription for eye surgery comprising:

means for filtering a first image map of an eye of a patient at a first time during the surgery to reduce noise;

means for processing the filtered first image map to produce a first edge image of the eye in two dimensions;

means for filtering a second image map of the patient eye at a second time during the surgery to reduce noise;

means for processing the filtered second image map to produce a second edge image of the eye in two dimensions;

means for selecting two identifiable features from one of the first and the second image maps;

means for correlating a location of the two features in the first and the second edge images;

means for calculating from the correlated locations an orientational change to be applied to a previously determined corrective prescription for a correction profile to be achieved on the eye during the surgery; and

means for controlling the processing, selecting, correlating, and calculating means to be performed at predetermined intervals throughout the surgery, in order to detect orientational changes on a substantially continual basis and permit substantially "real-time" application of the orientational change to the correction profile.

24. (Previously presented) A method for orienting a corrective prescription for eye surgery comprising the steps of:

processing a first image map of an eye of a patient at a first time during the surgery to produce a first edge image of the eye in two dimensions;

processing a second image map of the patient eye at a second time during the surgery to produce a second edge image of the eye in two dimensions;

selecting two identifiable portions of at least one blood vessel in a sclera of the eye from one of the first and the second image maps;

correlating a location of the two features in the first and the second edge images; and

calculating from the correlated locations an orientational change to be applied to a previously determined corrective prescription for a correction profile to be achieved on the eye during the surgery.

25. (Previously presented) The method recited in Claim 24, wherein the first and the second image map processing steps comprise filtering the first and the second image map, respectively, to reduce noise.

26. (Previously presented) The method recited in Claim 25, wherein the filtering steps comprise applying a Gauss filter to the first and the second image map and forming, from the first and the second filtered image maps, a first and a second filtered intensity profile.

27. (Previously presented) The method recited in Claim 26, wherein the first and the second image map processing steps further comprise applying a threshold to the

first and the second filtered intensity profiles to produce a first and a second thresholded image.

28. (Previously presented) The method recited in Claim 27, wherein the first and the second image map processing steps further comprise applying a thin function to the first and the second thresholded image to form the first and the second edge images.

29. (Previously presented) The method recited in Claim 24, wherein the first and the second filtered intensity profile forming steps comprise:

applying the Gauss filter to the first and the second intensity profiles at a first angle to form a first and a third modified intensity profile;

applying the Gauss filter to the first and the second intensity profiles at a second angle substantially perpendicular to the first angle to form a second and a fourth modified intensity profile;

averaging the first and the second modified intensity profiles to form the first filtered intensity profile; and

averaging the third and the fourth modified intensity profiles to form the second filtered intensity profile.